What is claimed is:

Sub A9

1. A CMOS image sensor comprising:

a photodiode having an impurity region formed in a semiconductor substrate; and

a first and a second MOS transistors formed by introducing impurities into said semiconductor substrate,

wherein a silicide film is not formed on a surface of an impurity region of said first MOS transistor having said impurity region connected to said impurity region of said photodiode, said first MOS transistor being positioned at least on one side of said photodiode, and a silicide film is formed on a surface of an impurity region of said second MOS transistor.

2. A CMOS image sensor comprising:

a photodiode having an impurity region formed in semiconductor substrate;

a first MOS transistor formed on said semiconductor substrate, the first MOS transistor having an impurity region as a drain connected to said impurity region of said photodiode;

a second MOS transistor formed on said semiconductor substrate, the second MOS transistor having an impurity region as a source connected to a source of said first MOS transistor; and

a third MOS transistor formed on said semiconductor substrate, the third MOS transistor having an impurity region as a source connected to a drain of

SUB A9

said second MOS transistor,

wherein a silicide film is not formed on a surface of said drain of said first MOS transistor, and a silicide film is formed on a surface of the source of said first MOS transistor and surfaces of the sources and the drains of said second and third MOS transistors.

2. 3. The CMOS image sensor according to claim 2, wherein a MOS transistor circuit for processing a signal output from said third MOS transistor is formed on said semiconductor substrate.

3. 4. The CMOS image sensor according to claim 2, wherein a timing circuit for supplying a signal to each gate of said first and third MOS transistors at a predetermined timing is provided on said semiconductor substrate, and a reading-out circuit for reading out a signal output from said third MOS transistor is provided on said semiconductor substrate.

4. 5. The CMOS image sensor according to claim 2, the CMOS image sensor further comprising:

an interlayer insulating film for covering said first to third MOS transistors;

a wiring formed on said interlayer insulating film; and

a connection plug buried in said interlayer insulating film, and the connection plug connecting said wiring to at least one of the sources and the drains of said first, second and third MOS transistors electrically.

6. The CMOS image sensor according to claim 2, wherein the source of said first MOS transistor, the source/drain of said second MOS transistor, and the source/drain of said third MOS transistor have an LDD structure, and the drain of said first MOS transistor has no LDD structure.

7. A manufacturing method of a CMOS image sensor comprising the steps of:

forming a photodiode by introducing impurities into a semiconductor substrate;

forming a gate electrode on said semiconductor substrate so as to interpose a gate insulating film therebetween;

forming a plurality of N channel MOS transistors by introducing N type impurities into said semiconductor substrate, the N channel MOS transistors including a reset transistor having an N type impurity region connected to a cathode of said photodiode;

forming a first insulating film covering a region extending at least from said photodiode to an impurity region on one side of said reset transistor positioned on one side of said photodiode; and

forming a metal film above said semiconductor substrate and allowing metal in the metal film and silicon on a surface of said silicon substrate to react with each other, thus forming a silicide film.

8. The manufacturing method of a CMOS image sensor

according to claim 7,

after the step of forming said silicide film, the manufacturing method further comprising the steps of:

removing said metal film to leave only said silicide film;

forming a second insulating film above said semiconductor substrate;

forming selectively a contact hole reaching an impurity region of said reset transistor positioned on one side of said photodiode and a contact hole reaching said silicide film;

burying a conductive substance in said contact hole to form a conductive film on said second insulating film; and

forming a wiring by patterning said conductive film.

9. The manufacturing method of a CMOS image sensor according to claim 7,

before the step of forming said photodiode, the manufacturing method comprising the step of forming a field oxide film for isolating device regions from each other electrically.

10. The manufacturing method of a CMOS image sensor according to claim 7, wherein the metal in said metal film is titanium.

11. The manufacturing method of a CMOS image sensor according to claim 7, wherein said first insulating film

is made of silicon oxide substance.

12. The manufacturing method of a CMOS image sensor according to claim 8, wherein said second insulating film is formed by laminating a plurality of insulating substances.

13. The manufacturing method of a CMOS image sensor according to claim 8, wherein a surface of said second insulating film is flattened by applying SOG thereon.

Add BB2